

Corres. and Mail
BOX AF



REPLY UNDER 37 C.F.R. § 1.116
EXPEDITED PROCEDURE
EXAMINING GROUP 2814

PATENT
2342-107P

IN THE U.S. PATENT AND TRADEMARK OFFICE

Applicant: Mitsuhiro HIRANO

Appl. No.: 08/813,200

Group: 2814

Filed: March 7, 1997

Examiner: M. DIETRICH

For: SUBSTRATE PROCESSING APPARATUS WITH LOCAL
EXHAUST FOR REMOVING CONTAMINANTS (AS
AMENDED)

15/Ext. 0
w/ (M. Hira) Hira
2-25-00
Amtd
Encl.
M. Dietrich
03/02/00

LARGE ENTITY TRANSMITTAL FORM
FOR REPLY AFTER FINAL UNDER 37 C.F.R. § 1.116

BOX AF

Assistant Commissioner for Patents
Washington, DC 20231

February 22, 2000
Tuesday after Holiday

Sir:

Transmitted herewith is an amendment in the above-identified application.

- ☐ The enclosed document is being transmitted via the Certificate of Mailing provisions of 37 C.F.R. § 1.8.
- ☒ The enclosed document is being transmitted via facsimile.

The fee has been calculated as shown below:

	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR		PRESENT EXTRA	RATE	ADDITIONAL FEE
TOTAL	4	-	26	=	0	\$ 18	\$0.00
INDEPENDENT	4	-	4	=	0	\$ 78	\$0.00
FIRST PRESENTATION OF A MULTIPLE CLAIM						\$260	\$0.00
						TOTAL	\$0.00

02/23/2000 SLKMM1 00000103 00013200

01 FC:115

110.00 00


- ☒ Petition for one (1) month(s) extension of time pursuant to 37 C.F.R. §§ 1.17 and 1.136(a). \$110.00 for the extension of time.
- ☐ No fee is required.
- ☒ A check in the amount of \$110.00 is enclosed.
- ☐ Please charge Deposit Account No. 02-2448 in the amount of \$0.00. This form is submitted in triplicate.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By 
Michael R. Mutter, #29,680


MKM/DRA:mpe
2342-107P

P.O. Box 747
Falls Church, VA 22040-0747
(703) 205-8000



Box: AF
REPLY UNDER 37 C.F.R. § 1.116
EXPEDITED PROCEDURE
EXAMINING GROUP 2814
PATENT
2342-107P

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Mitsuhiro HIRANO
Application No. 08/813,200 Group: 2814
Filed: March 7, 1997 Examiner: M. Dietrich
For: SUBSTRATE PROCESSING APPARATUS WITH LOCAL
EXHAUST FOR REMOVING CONTAMINANTS (As Amended)

Response After Final Under 37 C.F.R. 1.116

Assistant Commissioner for Patents
Washington, D.C. 20231

February 22, 2000
Tuesday after Holiday

Sir:

In reply to the outstanding Office Action dated October 20, 1999, the period for response being extended one month to February 20, 2000, the following amendments and remarks are respectfully submitted.

In the Claims

Please cancel claims 1-9, 12-15, 17, 19, and 27-29 without prejudice or disclaimer of the subject matter recited therein and amend claims 10, 11, 16, and 18 as follows.

Deleted
10. (Three times amended) A substrate processing apparatus [as recited in claim 8, further] comprising: [a second flow rate regulator and a pressure detector for detecting pressure in said load lock chamber, wherein said gas supply and said local exhaust are respectively provided with said flow rate regulator and said second flow rate regulator,]

a substrate processing chamber for processing a substrate;

a load lock chamber;

a gas supply for supplying gas into said load lock chamber;

a chamber exhaust for exhausting said load lock chamber, said chamber exhaust including an atmospheric pressure vent line and a vacuum exhaust line which is to be connected to a vacuum pump, pressure at one end of said atmospheric pressure vent line being substantially equal to the atmospheric pressure and the other end of said atmospheric pressure vent line being connected with said load lock chamber;

a moving mechanism provided in said load lock chamber for moving said substrate;

a local exhaust for locally exhausting a dust generating portion of said moving mechanism;

flow rate regulators respectively provided in said gas supply and said local exhaust;

a first valve disposed at an intermediate portion of said vacuum exhaust line;

a second valve disposed at an intermediate portion of said atmospheric pressure vent line;

a controller; and

a pressure detector for detecting pressure in said load lock chamber, wherein

said first and second valves are controlled by said controller such that during movement of said substrate by said moving mechanism, said first valve is closed and said second valve is opened, and

during movement of said substrate by said moving mechanism, an amount of gas supplied by said gas supply into said load lock chamber is controlled by said flow rate regulators to be greater than an exhaust amount from said local exhaust [by said flow rate regulator and said second flow rate regulator], and the gas supplied by said gas supply is exhausted by said local exhaust and said chamber exhaust.

11. (Twice amended) A substrate processing apparatus [as recited in claim 8, further] comprising:

a substrate processing chamber for processing a substrate;

a load lock chamber;

a gas supply for supplying gas into said load lock chamber;

a chamber exhaust for exhausting said load lock chamber, said chamber exhaust including an atmospheric pressure vent line and a vacuum exhaust line which is to be connected to a vacuum pump, pressure at one end of said atmospheric pressure vent line being substantially equal to the atmospheric pressure and the other end of said atmospheric pressure vent line being connected with said load lock chamber,

a moving mechanism provided in said load lock chamber for moving said substrate;

a local exhaust for locally exhausting a dust generating portion of said moving mechanism;

a flow rate regulator in one of said gas supply, said chamber exhaust and said local exhaust;

a first valve disposed at an intermediate portion of said vacuum exhaust line;

a second valve disposed at an intermediate portion of said atmospheric pressure vent line;

a controller; and

a pressure detector for detecting pressure in said load lock chamber,

wherein

said first and second valves are controlled by said controller such that during movement of said substrate by said moving mechanism, said first valve is closed and said second valve is opened, and

[a pressure detector for detecting pressure in said load lock chamber, wherein]

during movement of said substrate by said moving mechanism, said controller controls said flow rate detector to keep the inside of said load lock chamber at a higher pressure level than the atmospheric pressure.

16. (Twice amended) A substrate processing apparatus [as recited in claim 15, further] comprising: [a third vacuum exhaust line which is communicated with]

a substrate processing chamber for processing a substrate;

a load lock chamber;

a gas supply for supplying gas into said load lock chamber;

a chamber exhaust connected with said load lock chamber for exhausting said load lock chamber;

a moving mechanism provided within said load lock chamber for moving said substrate;

a first vacuum exhaust line which is to be connected to a vacuum pump;

a second vacuum exhaust line which is connected with said substrate processing chamber and said first vacuum exhaust line;

a third vacuum exhaust line which is connected with said load lock chamber and said first vacuum exhaust line.

a local exhaust, connected with said first vacuum exhaust line and not connected with said load lock chamber, for locally exhausting a dust generating portion of said moving mechanism;

a first valve connected to an intermediate portion of said local exhaust;

a second valve provided at an intermediate portion of said third vacuum exhaust line; and

a valve controller capable of controlling said first and second valves; wherein

[said load lock chamber and said first exhaust line, and a second valve provided at an intermediate portion of said third vacuum exhaust line, wherein

said valve controller is also capable of controlling said second valve, and]

during processing of said substrate in said substrate processing chamber, said valve controller controls said second valve to be closed.

18. (Three times amended) A substrate processing apparatus [as recited in claim 17, further] comprising:

a substrate processing chamber for processing a substrate;

a load lock chamber;

a gas supply for supplying gas into said load lock chamber;

a chamber exhaust for exhausting said load lock chamber;

a moving mechanism provided in said load lock chamber for moving said substrate;

a local exhaust for locally exhausting a dust generating portion of said moving mechanism;

a flow rate regulator in one of said gas supply, said chamber exhaust and said local exhaust;

a partition plate provided in said load lock chamber for partitioning said load lock chamber into a first region in which said substrate is moved and a second region in which said moving mechanism is positioned; and

a slit provided in said partition plate, wherein

said gas supply is connected with said load lock chamber at the first region of said load lock chamber in which said substrate moves,

said chamber exhaust is connected with said load lock chamber at the second region of said load lock chamber in which said moving mechanism is provided, and

[a partition plate provided in said load lock chamber for partitioning said load lock chamber into the first region in which said substrate is moved and the

second region in which said moving mechanism is positioned, and a slit provided in said partition plate, wherein]

gas supplied by said gas supply into the first region in which said substrate is moved is made to flow into the region in which said moving mechanism is positioned.

Remarks

Reconsideration and allowance of the subject application are respectfully requested. Upon entry of this amendment, claims 10, 11, 16, and 18 remain pending, each being independent. In this amendment, Applicant has canceled previously rejected claims 1-9, 12-15, 17, 19 and 27-29 without prejudice or disclaimer of the subject matter recited therein, and has amended each of claims 10, 11, 16, and 18 to be in independent form, including the limitations of their respective base claims, and any intervening claims.

Allowable Subject Matter

Applicant appreciates the Examiner's indication on page 7 of the Office Action that claims 10, 11, 16, and 18 would be allowable if rewritten in independent form, including the limitations of their respective base claim and any intervening claims. As mentioned above, Applicant has amended each of claims 10, 11, 16, and 18 to be in independent form, including the features of their respective base claim, and any intervening claims. Applicant has also canceled each of the previously-rejected claims 1-9, 12-15, 17, 19, and 27-29. Therefore, Applicant submits that each of the presently-pending claims is in clear condition for allowance.

Objection to the Drawings/Claims

With regard to the outstanding objection to the drawings, Applicant respectfully directs the Examiner's attention to the remarks set forth on page 7 of the After Final Amendment dated January 20, 2000, and respectfully requests that the Examiner reconsider and withdraw the objection to the drawings.

With regard to the outstanding claim objections, the amendments to the claims set forth above have been made taking into account the informalities cited on page 2 of the outstanding Office Action. Accordingly, Applicant respectfully requests that the Examiner reconsider and withdraw the outstanding claim objections, insofar as such objections pertain to the presently pending claims.

Claim Rejections

With regard to the outstanding rejection of claims 27-29 under 35 U.S.C. § 112, second paragraph, and the rejection(s) of claims 1-9, 12-15, 17, 19, and 27-29 based on the prior art, Applicant submits that these rejections have been rendered moot by the cancellation of claims 1-9, 12-15, 17, 19, and 27-29. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the outstanding claim rejections under 35 U.S.C. § 112, § 102, and § 103.

Conclusion

Applicant respectfully requests that the Examiner enter the amendments presented herein. Because these amendments place the application in clear condition for allowance based on the Examiner's previous indication of allowable subject matter, Applicant submits that these amendments do not raise new issues which would require further consideration and/or search.

If the Examiner has any questions or needs to discuss any matters dealing with this application, he is requested to contact D. Richard Anderson, Reg. No. 40,439 at (703) 205-8000 in the Washington, D.C. area.

Pursuant to the provisions of 37 C.F.R. 1.17 and 1.136(a), the Applicant hereby petitions for an extension of one month to February 20, 2000 for the period in which to file a response to the outstanding Office Action. The required fee of \$110.00 is attached hereto.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By: 

Michael K. Mutter, Reg. No. 29,680
P.O. Box 747
Falls Church, VA 22040-0747

(703) 205-8000
MKM/DRA:mpe

